

REMARKS

This Amendment is in response to the Office Action mailed on June 27, 2010. Claims 1 and 2 are amended. The amendments to claim 1 are supported, for example, in the specification on page 9, line 27-page 10, line 7; page 12, line 8-page 13, line 23; and in Figs. 4A-4C. Claim 2 is amended editorially. No new matter is added. Claims 1-5 are pending.

Specification Objections:

The Abstract is objected to for informalities. The Abstract is amended and no longer contains the informalities identified in the objection. Withdrawal of this objection is requested.

Claim Objections:

Claims 1 and 2 are objected to for informalities. Claims 1 and 2 are amended to replace the term "filtering processing" with the term "filtering" as suggested by the Examiner. Withdrawal of this objection is requested.

§103 Rejections:

Claims 1-5 are rejected as being unpatentable over Hwang (US Patent No. 7,604,596) in view of Napolitano (US Patent No. 6,679,846). This rejection is traversed.

Claim 1 is directed to an ultrasonic diagnosis apparatus that recites, among other features a first spatial filter operation portion for subjecting each of a plurality of the reception beam data including the reception beam data converted from parallel reception beams received in parallel from a single transmission beam to filtering. Also, claim 1 recites that the filter coefficient calculation portion applies the filter coefficient to the reception beam datum converted from the parallel reception beam received in parallel with the target reception beam so as to be smaller than the filter coefficient applied to the reception beam data which is converted from the reception beam other than the parallel reception beam and is symmetrical in positional relationship to the reception beam data with respect to a center at a position of the target reception beam.

The combination of Hwang and Napolitano does not teach or suggest these features. The rejection appears to rely on Hwang for teaching the first spatial filter operation portion of claim 1. However, nowhere does Hwang teach or suggest parallel reception beams received in parallel from a single transmission beam. Thus, Hwang cannot teach or suggest a first spatial filter operation portion that subjects each of a plurality of the reception beam data including the reception beam data converted from parallel reception beams received in parallel from a single transmission beam to filtering. Accordingly, Hwang also cannot teach or suggest that the filter coefficient calculation portion applies the filter coefficient to the reception beam datum converted from the parallel reception beam received in parallel with the target reception beam so as to be smaller than the filter coefficient applied to the reception beam data which is converted from the reception beam other than the parallel reception beam and is symmetrical in positional relationship to the reception beam data with respect to a center at a position of the target reception beam, as recited in claim 1.

Napolitano does not overcome these deficiencies of Hwang. First, nowhere does Napolitano teach or suggest a first spatial filter operation portion that subjects each of a plurality of the reception beam data including the reception beam data converted from parallel reception beams received in parallel from a single transmission beam to filtering. Also, while Napolitano teaches spatial filter coefficients that are determined as a function of range, elevation, and/or azimuth (see column 14 of Napolitano), nowhere does Napolitano teach or suggest a filter coefficient calculation portion that applies the filter coefficient to the reception beam datum converted from the parallel reception beam received in parallel with the target reception beam so as to be smaller than the filter coefficient applied to the reception beam data which is converted from the reception beam other than the parallel reception beam and is symmetrical in positional relationship to the reception beam data with respect to a center at a position of the target reception beam. Thus, the combination of Hwang and Napolitano fails to teach or suggest every feature of the claims.

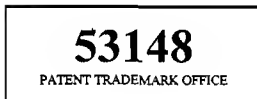
An advantage of the above features of claim 1 is that the filtering for reducing a difference in image quality between adjacent beams can be optimized. Thus, it is possible to display a high-quality ultrasonic image in which the generation of stripes in a

direction of acoustic lines can be suppressed (see page 12, line 8-page 13, line 23 and Figs. 4A-4C of the present application). Nowhere does Hwang or Napolitano contemplate suppressing the generation of stripes in a direction of acoustic lines. Thus, it would not be obvious to one skilled in the art to modify the combination of Hwang and Napolitano to obtain the features of claim 1.

For at least these reasons claim 1 is not suggested by the combination of Hwang and Napolitano and should be allowed. Claims 2-5 depend from claim 1 and should be allowed for at least the same reasons.

Conclusion:

Applicants respectfully assert that the pending claims are in condition for allowance. If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicants' primary attorney-of record, Douglas P. Mueller (Reg. No. 30,300), at (612) 455-3804.



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Respectfully submitted,

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